FEDERAL COLUMBIA RIVER POWER SYSTEM

PROTOCOLS FOR EMERGENCY OPERATIONS IN RESPONSE TO GENERATION OR TRANSMISSION EMERGENCIES—

FOR ATTACHMENT TO THE TECHNICAL MANAGEMENT TEAM'S WATER MANAGEMENT PLAN AND OTHER APPROPRIATE ACTION PLANS

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A. Introduction

This paper attempts to define a protocol for reacting to emergency conditions and situations that arise affecting the generation and delivery of energy produced by the Federal Columbia River Power System (FCRPS), including the immediate response taken in the face of the emergency and any necessary follow-on activities deemed appropriate as a consequence of the emergency and the immediate response. The specific purpose for this effort is to establish a formal, written emergency procedure for actions affecting the system.

The purposes of these protocols are to: 1) identify criteria for declaration of power system emergencies; 2) identify procedures for responding to power system emergencies including follow-up activities; and 3) establish procedures for the consideration of mitigation for fish and wildlife caused by the emergencies. It is the intent that these protocols would be incorporated into the annual Water Management Plan of the Technical Management Team (TMT) to guide actions taken by the Federal operating agencies and other parties in the Region.

B. Definition of an Emergency:

"**e•mer•gen•cy** (i mur'jen se), n., pl. **-cies**. a sudden, urgent, usually unforeseen occurrence or occasion requiring immediate action."

Random House College Dictionary, 1980

It is appropriate to define emergencies as they apply to the operation of the FCRPS. As evident from previous actual events, emergencies are a unique situation having the potential for many types of impacts, generally requiring some type of action or response to minimize or eliminate impacts. An emergency may involve the need to operate the FCRPS outside of the requirements contained in the 1995 Biological Opinions or the associated Records of Decision (ROD) issued by the operating agencies. These events may increase fish mortality above levels in the 1995 Biological Opinion and RODs.

However, it is important to distinguish emergencies from “planned risks.” In operating a complex system such as the FCRPS, certain risks are assumed every day. Future conditions are uncertain. Operational decisions rely on predictions, forecasts and probabilities. If an extreme circumstance occurs, it is not necessarily an emergency even though it was sudden and urgent, and caused an immediate action to be taken.

C. Goals:

1. An overall goal of this protocol is to prevent or minimize, and mitigate emergency-related FCRPS impacts to the fish protection measures in the Biological Opinions and RODs. ***

2. To achieve this goal, the Federal operating agencies will maintain and use system flexibility in-season so that responses to emergencies, when required, will consider alternatives. The Federal operators commit to improving system reliability by identifying and completing actions to achieve improved reliability.

3. Another goal of this protocol is to complete timely coordination and consultation in accordance with Section E.

   *** This does not create legal rights or obligations on the part of any party.

D. Categories of Emergencies:

For this protocol, emergencies are categorized into three types. They are restricted to power-type emergencies only. Each type is described below and illustrated with several examples.

1. Generation Emergency - the potential for or actual insufficiency of electrical generation to satisfy electrical demand or load in a particular geographical area. The insufficiency can be of short duration (a capacity shortfall) or have the potential to persist for a period of time (an energy shortfall) and is usually spread over a defined geographical area as determined by the interconnectivity of the transmission and distribution system.

   For example, a generation emergency may be caused by an unanticipated loss of a generating resource - a project/unit forced outage; or by a restriction in the amount of water available for project discharge - reducing on-site generation; or by a loss of electrical transmission capability used to import electricity into a particular geographic area - a transmission line restriction or shutdown.

2. Transmission Emergency - the potential or actual loss or limitation in the ability to move electricity from the site of generation to the actual consumer or end-user.

   For example, a transmission line may fail, shutdown or otherwise be unavailable to transmit any electrical energy - a line outage; or a physical condition may exist that prevents or limits effective and reliable transmission - insufficient reactive power (VARs) to overcome the inherent losses in long-distance transmission; or a temporary limitation

on transmission line capability that restricts the export of electricity - which causes a generation surplus in one area, thus reducing overall generation levels but causes a shortage in another area as noted above in the description for a generation emergency.

3. Other Emergency - the existence or result of extenuating circumstances which fall outside the range of normal operations, was unanticipated, and may have resulted in catastrophic impact, physical damage or failure to part of the physical power system.

   For example, all natural disasters fall under this category of emergency - earthquakes, floods, and fires; or human caused failures - ship or barge strandings, facility failures (e.g., locks, gates, outlets, etc.), chemical spills into the river, train derailments impacting the river and terrorist acts; or overriding circumstances or needs that require operations to exceed normal limits such as a police investigation, a rescue operation, and a project operation specifically designed to prevent damage to or protect other parts of the FCRPS.

There are number of “givens” surrounding emergencies:

- As the dictionary definition implies, emergencies are unforeseen and can occur at any moment in time.
- While many types of emergencies can be identified or described (as was done just above), not all emergencies can be so identified prior to happening.
- Emergencies are first recognized by those individuals who operate or are responsible for the system or facility.
- Generally, the individual who recognizes the emergency is the first person to take steps in responding to the situation.
- What is an emergency to one person may not be considered an emergency to another.
- It is possible to plan for and to develop procedures for responding to many, but not all, emergencies.
- The level or criticality of emergencies spans over a range including those that require immediate action to those that allow for coordination among affected parties prior to action.

E. Emergency Protocol:

1. Emergencies can be further categorized by level of criticality or immediacy -- there are emergencies in which time is essential and quick action is required because of an immediate public safety concern. For the power system, this type of emergency is characterized by system instability or the potential for electrical service to be interrupted. There is another type of emergency in which operation can continue without immediate or significant public safety concerns. For the power system, this type of emergency is characterized by a stable system with no immediate loss of load-serving capability.

2. With regard to FCRPS operation and if time warrants, one the Federal operating agencies will notify TMT members via email or telephone of the potential emergency situation. Preparatory actions may begin at this time in an attempt to lessen the severity or length of the emergency. Additional emergency actions will be taken as necessary. Following the event, the appropriate agency will follow up with a statement from senior management and

the information outlined below in section 3. ~~an emergency will be declared by one of the Federal operating agencies at a senior management level or other appropriate levels with follow up by senior management.~~

3. In an emergency situation, the Corps, Reclamation, and BPA will act as necessary and do what is necessary to maintain power system stability and public safety. ~~In this event, one of these agencies will provide notification within one to two hours~~ In the event notification has not already occurred as outlined above, one of the Federal agencies will provide notification within one to two hours that an emergency has occurred to the IT and TMT chairs (who will disseminate information regarding the emergency to members of these teams) and to a designated list of "first contacts" from the TMT. The notification will include a brief description of the event, and will detail action that is being taken in response to the emergency. A more detailed (one page) written incident report will be provided to the IT and TMT chairs and the first contacts of TMT by the following day. It will include the following information: 1) description of the emergency, how it occurred, and how long it is anticipated to last, 2) description of how the emergency jeopardized system stability or public safety, 3) identification of agencies that declared and responded to the emergency, 4) identification of who were notified of the emergency, 5) description of what actions were taken by each agency, and 6) identification of alternatives considered to reduce and mitigate impacts of the emergency.

4. By the following day the Corps, Reclamation, and BPA will arrange for an emergency conference call with at least the persons from TMT initially contacted and if appropriate, all other TMT representatives of the Federal agencies, state, and Tribal sovereigns. The purpose of the call is: 1) to review status of the emergency, 2) to insure that all requirements for declaration of the emergency by the Corps, Reclamation, and BPA have been met and that all alternatives for offsetting adverse impacts of the emergency have been considered, and 3) to review the use of priority action lists.

5. In an emergency, FCRPS operators will use priority action lists, direction from TMT or other groups, Standard Operating Procedures for specific projects, and/or guidance from specific Federal agencies to recover from the emergency situation. Priority action lists and other procedures developed through TMT will be contained in the annual Water Management Plan. They include, but are not limited to, a spill priority list for managing total dissolved gas, a generation emergency response action plan and others. See Appendices for Priority Action Lists and Procedures.

6. The agency that calls the emergency or initiates action to remedy an emergency will be responsible for notifying affected parties when the emergency situation is passed. In general, system operation will revert to normal conditions or as planned at the most recent in-season management forum when the emergency is declared over.

7. The Federal agencies will provide an opportunity for representatives of the region's affected parties to review the course of event for the emergency and to suggest refinements to these protocols or to the specific action steps employed.

8. The following flowchart illustrates the emergency response protocol described above:

A condition arises that immediately threatens or disrupts system stability, operation, or public safety

Senior management at one of the Federal operating agencies declares an emergency
A written declaration is distributed to the Regional Forum as soon as possible after the declaration

RED EMERGENCY

System operators react to critical situation and immediately take action as necessary to regain system stability or protect public safety

To the extent time allows, pre-existing plans are used to guide response

Notification of the emergency is made within 2 hours to regional representatives (IT, TMT and TMT Emergency Response Team)

Follow-up conference call and incident report will occur by next working day.

YELLOW EMERGENCY

Notification of the emergency is made as soon as reasonably possible to regional representatives (IT, TMT and TMT Emergency Response Team) an Emergency TMT conference call is convened (time permitting)

Actions are taken based on pre-existing plans or discussions of the TMT ~~lists~~; advice and recommendations from regional groups is incorporated into response

Follow-up meeting or conference call and written report within the next week detailing the incident and response

Agency declares emergency over

Assess or evaluate emergency and response to it for purposes of refining protocols or identifying continuing action/mitigation

F. Offsetting Adverse Effects of Emergency and Response Actions:

1. In the event that emergency conditions or the immediate response to an emergency situation results in an operation that causes adverse effects to fish and wildlife, the TMT will assess the magnitude of the adverse effect and provide information on measures available to offset it. Alternative operations to offset adverse effects in-place, in-kind in a timely manner shall receive the highest priority. The members of the Regional Forum agree to cooperate in the development of this information for consideration through the TMT process.

2. If the operation that was affected is a requirement of a Biological Opinion, then the appropriate agency (National Marine Fisheries Service (NMFS) or Fish and Wildlife Service (USFWS)) will use the information on the magnitude of the adverse effects to determine whether the modified operation is inconsistent with the relevant Biological Opinion(s). If the modified operation differs significantly from the conditions in the Biological Opinion(s) then, in the absence of appropriate remedial action, NMFS or USFWS may require re-initiation of consultation, and offsetting measures may be needed to conclude that the action satisfies Endangered Species Act requirements.

3. If the operation that was affected is determined by NMFS or USFWS to be inconsistent with the relevant Biological Opinion(s), offsetting measures may still be recommended. An agency deciding not to provide mitigation, or mitigation different from that recommended through the TMT process, will provide a written explanation for the record stating the decision and the basis for the decision.

4. Nothing in this section prevent a sovereign from independently pursuing mitigation under applicable Federal, state or Tribal law.

Appendices

1. Spill Priority List

   [Not included here - it is developed for each operating year.]

2. Generation Emergency Action Plan

   This plan presents in a priority order groups of actions that would be invoked in the event of a generation emergency. Depending in the criticality of the emergency, actions within each group will be selected to provide the magnitude of system benefit needed to recover from the emergency. In other words, if a large increase in generating capacity is needed, then the action that provides this increase will must likely be taken first within the group of actions.

   Group 1 Actions (first taken):

   - Return all units to service by canceling or postponing scheduled outages
   - Put into service all possible generators (e.g., Grand Coulee pump-generators)
   - Increase flows at specific projects to meet peak generation need

- Buy energy/capacity at market prices
- Reduce or eliminate BPA non-firm contracts

Group 2 Actions:

- Operate units outside of any particular efficiency range (e.g., 1%)
- Operate projects outside of minimum operating pool ranges
- Reduce spill at one or more projects
- Adjust flows outside of planned targets or as preset by TMT
- Restrict intertie capacity reducing import or export
- Shed other non-BPA non-firm contracts
- Reduce firm loads
- Violate flood control or other first priority non-power requirements
- Buy energy/capacity at any price